

## **SECTION 301 - STORM SEWERS**

### **1. DESCRIPTION**

This item shall consist of constructing sewers for the removal of surface water from collection points; at the location and to the lines, grades, and details shown on the Drawings in accordance with the latest version of Section 817 of the Kansas Department of Transportation (KDOT) Standard Specifications or as stated herein.

### **2. CLASSIFICATION OF STORM SEWER PIPE**

Unless otherwise specified, all storm sewer pipe shall be Class III reinforced concrete pipe (RCP) in accordance with the latest version of Section 1902 of the KDOT Standard Specification or Polypropylene Dual Wall Storm Sewer Drainage Pipe (PP pipe) per below. Pipe shall be inspected upon delivery at the site of the work and may be rejected for porous spots, patches to repair defects, cracks, irregularity of shape or size, exposure of reinforcement, as well as for failure to meet physical requirements. Rejected sections of pipe shall be immediately removed from the job site.

PP pipe and fittings 12 inch through 30 inch diameter shall conform to ASTM F2736 and AASHTO M330 and ASTM F2881 and AASHTO M330 for 36 inch through 60 inch. The pipe shall be dual wall polypropylene pipe with a smooth interior and annular exterior corrugation. Pipe shall be joined with an integral bell and spigot joint on all sizes. The joints shall be watertight in accordance with ASTM D3212. The spigot shall have two gaskets meeting the requirements of ASTM F477. The gaskets shall be installed by the pipe manufacturer and shall be covered with a removable, protective wrap to ensure the gaskets are free from debris. A joint lubricant shall be used on the gasket and pipe bell during assembly. Pipe shall have a reinforced bell with a polymer composite band installed by the manufacturer.

Prior to the installation of any pipe on the project, the Contractor shall be required to furnish in writing, proper certification from the manufacturer or a recognized testing agency that the pipe fulfills every requirement of the specifications set forth above.

### **3. EXCAVATION AND BACKFILL**

The trench shall be excavated beginning at the outlet end and proceeding toward the upper end; true to line and grade shown on the Drawings or as established by the Engineer. Trench excavation and backfill shall conform to Section 101, entitled "Trench and Backfill."

### **4. LAYING**

All pipe shall be laid with ends abutting and true to line and grade. They shall be laid in the beds so that the lower portion of each pipe is supported for its entire length to a depth at least equal to one-fourth (1/4) the external diameter of the pipe. They shall be fitted and matched so that when laid in the trench, they will form a sewer with a smooth uniform invert.

### **5. JOINTS**

Pipes being lowered into the trench shall be carefully cleaned and matched to fit to form a smooth, uniform invert. Pipes shall be joined according to manufacturer's recommendations.

6. CONNECTION TO EXISTING MANHOLE

Storm sewer pipe shall be connected to existing manholes at locations shown on the Drawings or as directed by the Engineer. The opening in the manhole shall be large enough to insert the sewer pipe and then it shall be sealed up with mortar.

7. CONCRETE COLLAR

Storm sewer joints shall be encased in a concrete collar at locations shown on the Drawings or where new pipe is connected to existing pipe. This encasement shall be constructed in accordance with the detail indicated on the Drawings. Minimum encasement, if none is detailed, shall consist of 6 inches of concrete extending a minimum of 1.5 feet past each side of the joint. Reinforcement shall consist of a cage of #4 bars at 6 inch centers longitudinally, and 3-#4 bars transverse to the pipe centerline.

8. MEASUREMENT AND PAYMENT

Storm sewer pipe shall be measured by the linear foot of the various sizes of storm sewers. Payment shall be made on the amount of completed and accepted work at the contract unit price bid per linear foot for "Storm Sewer" of the specified size and type, with the lengths determined from center to center of structure, unless otherwise noted on the plans.

Payment for storm sewer end section will be made at the contract unit priced bid per each for "End Section" of the specified size and type. Concrete toe walls and/or bar grates shall be considered subsidiary to end sections.

Concrete Collar construction shall be paid for at the contract unit price bid per each for "Concrete Collar."